# North Carolina Department of Health and Human Services Division of Public Health • Epidemiology Section Communicable Disease Branch





# HEMOLYTIC-UREMIC SYNDROME Confidential Communicable Disease Report—Part 2 NC DISEASE CODE: 59

### ATTENTION HEALTH CARE PROVIDERS:

Please report relevant clinical findings about this disease event to the local health department.

REMINDER to Local Health Department staff: If sending this form to the Health Care Provider, remember to attach a cover letter from your agency indicating the part(s) of the form the provider should complete.

| Patient's Las  | t Name  | First                  | Middle       | ٤                 | Suffix       | Maiden/Other                       | Alias           | Birthdate (mm/dd/yyyy)  |
|--|---|------------------------|--------------|-------------------|--------------|------------------------------------|-----------------|---|
|  |   |                        |              |                   |              |                                    |                 | SSN   |
|  |   |                        |              |                   |              |                                    |                 |   |
| NC EDSS LAB RESULTS  Verify if lab results for this event are in NC EDSS. If not present, enter results. |   |                        |              |                   |              |                                    |                 |   |
|  |   |                        |              |                   |              |                                    |                 |   |
| Specimen<br>Date   | Specimen #  | Specimen<br>Source     | Type of Test | Test<br>Result(s) | Desc         | ription (comments)                 | Result Date     | Lab Name—City/State   |
| / /  |   |                        |              |                   |              |                                    | 1 1             |   |
| / /  |   |                        |              |                   |              |                                    | / /             |   |
| 1 1  |   |                        |              |                   |              |                                    | 1 1             |   |
|  | l   |                        |              | I.                |              |                                    |                 |   |
|  | S PART 2 WII<br>INICABLE DIS  |                        |              |                   |              |                                    |                 |   |
| Is/was patient s   | ymptomatic fo   | r                      | Patie        | ent in child care | 9?           |                                    | U During the    | 31 days prior to onset of HUS, did                              |
| this disease?  |   |                        | N □U Patie   | ent a child care  |              |                                    | the patien      | nt have exposure to animals (includes                           |
| If yes, symptom  | ı onset date (m   | m/dd/yyyy):/           | // in c      | hild care?        |              |                                    | U animal tiss   | sues, animal products, or                                       |
| CHECK ALL THAT   | APPLY:  |                        | Patie        | ent a parent or p | primary c    | aregiver of a child in             | animal exc      | creta)? Y N U   |
| Fever  |   | ЦҮ Ц                   | N ∐ U _chil  | d care?           |              |                                    | U If yes, spec  | cify and give details:  |
| Yes, subject   |   |                        | ls pa        | tient a student   | ?            |                                    | U               |   |
| ☐ Yes, measur  |   |                        |              | tient a school \  | WORKER       | / VOLUNTEER in NC                  |                 | pets?   |
| Highest measu  | red temperature   |                        |              |                   |              |                                    |                 |   |
| Fever onset da   | Fever onset date (mm/dd/yyyy): Give details: If yes, specify and give details:  Altered mental status |                        |              |                   |              |                                    |                 |   |
| Detient dienles  | ed (select all tha  |                        | N L U        | ag the 21 days    | prior to o   | nset of HUS, was the               |                 |   |
| Delirium   | ed (select all that<br>Hallu  |                        |              | ig the 31 days    | prior to o   | ilset of nos, was the              | Did nationt     | / household contact work at, live on,                           |
| Coma   | □ Illusio   |                        |              |                   | l worker?    |                                    | or visit a f    | farm, ranch, or dairy? Y N                                      |
| Disorientat  | ion   | 0115                   | \/\          | here employed?    | Worker       |                                    | If yes sne      | cify and give details:  |
| Nausea   | 1011  | $\Box \lor \Box \iota$ | N □ U Sr     | necify inh duties |              |                                    | 11 yes, spec    | ony and give details.   |
| Vomiting   |   |                        | N III W      | hat dates did the |              |                                    |                 |   |
| Abdominal pair   | or cramps   |                        | NΠÜ          |                   | -            |                                    | Was patient     | t exposed to animals associated with                            |
| Abdominal pair<br>Diarrhea   |   |                        | N D Em       | ployed as food    | l worker w   | /hile                              | agricultur      | e or aviculture (domestic/semi-domestic                         |
| Describe (selec  | t all that apply)   |                        | s)           | mptomatic?        |              |                                    | ∪ animals)?     | Y \( \text{N} \) \( \text{U} \)                                 |
| Bloody   |   |                        | W            | here did the pat  | ient work?   |                                    | If yes, spec    | cify and give details:  |
| ☐ Non-blood  | V   |                        | W            | hat dates did the | e patient w  | vork?                              |                 |   |
| ☐ Watery   |   |                        | _            |                   |              |                                    |                 |   |
| Other  |   |                        |              |                   | patient retu | urn to food service worl           | c? Did the pati | ient work at or visit a fair with                               |
|  | er of stools in a   |                        |              | Date:             |              |                                    | livestock       | or a petting zoo? Y N U   |
| Proteinuria  |   | 🗀 Y 🔲                  |              |                   |              | work?                              | If yes, spec    | cify and give details:  |
| Acute renal ins  | ufficiency  | □ Y □                  | N 🔲 U Noi    | n-occupational    |              |                                    |                 |   |
| Acute renal fail   | ure   |                        | N ∐ U (e     | .g. potlucks, rec | eptions) di  | uring<br>Y \( \Bar N \) \( \Bar \) | lu Dialaba nasi | iant work at an violt a sec                                     |
| Elevated creating  | nine  |                        |              |                   |              |                                    | Ju the pati     | ient work at or visit a zoo,<br>I park, or aquarium?□ Y □ N □ U |
| Hemolytic urem   | ic syndrome (I  | HUS).∐Y ∐              | N ∐ U W      | here employed?    | !            | contagious period:                 |                 | cify and give details:  |
| Thrombotic thro  | ombocytopenio   | purpura                |              | becity dates wor  | keu uuring   | g contagious periou.               | ii yes, spe     | city and give details.  |
| (TTP)  |   | H                      | N ∐U Heal    | th care worker    | or child c   | are worker                         |                 |   |
| Thrombocytope  | nıa   | Ү Ц                    | N ∐ U har    | idling food or n  |              |                                    | Did patient     | work in a veterinary practice or animal                         |
| Platelet count_ Platelets <1   |   | _                      | cor          | tagious period    | 1?           |                                    | ∪ laboratory    | , animal research setting,                                      |
| Anemia   | 50,000  | $\Box \lor \Box$       |              | ere employed?     |              |                                    | biomedica       | al laboratory, or an animal                                     |
| Anemia<br>Acute hemolytic  |   | H                      | N            | city dates works  | ed during (  | contagious period:                 | diagnostic      | c laboratory? 🗆 Y 🗆 N 🗆 U                                       |
| Acute nemolytic  | andinathia  | H \ H                  | N H U        | ony dates work    | ca adming (  | oomagious periou.                  |                 | cify and give details:  |
| Acute with micro<br>Hemoglobin <1  | angiopaniic Cha<br>1  |                        |              |                   |              |                                    |                 |   |
| Hematocrit <22   | I   | H \ H                  | N I          |                   |              |                                    |                 |   |
| i iciliatociit \33   | ٠   |                        | IV 🗆 U       |                   |              |                                    |                 |   |

| Patient's Last Name   | First  | Middle  | Suffix  | Maiden/Other   | Alias  | Birthdate (mm/dd/yyyy)  |
|---|--|---|---|--|--|---|
|   |  |   |   |  |  | SSN   |
| PREDISPOSING CONDITION  | IS   | ISOLATION/QU  | JARANTINE/C   | CONTROL MEASURES   | BEHAVIORAL RISI  | K & CONGREGATE LIVING   |
| Any immunosuppressive condition Specify  Gastrointestinal disease Did patient have diarrhea within of onset of HUS? Other underlying illness Please specify   | ns?.   Y   N   U     U   | Restrictions to n freedom of acti Check all that ap Work Child care School  Date control me Date control me Was patient con   | novement or ion?  |  | During the 31 days pri patient live in any co (correctional facility, be boarding school, camp fraternity)?  | or to onset of HUS did the ngregate living facilities arracks, shelter, commune, of dormitory/sorority/   |
| REASON FOR TESTING  Why was the patient tested for to symptomatic of disease Screening of asymptomatic pereported risk factor(s)  Exposed to organism causing (asymptomatic)  Household contact to a person this disease  Other, specify  Unknown | erson with<br>this disease<br>n reported with                                | Did local health additional contro classrooms, spec etc.)   | director or de ol measures? cial cleaning, a cleaning de ation orders isses the patient is clarted?               | esignee implement (example: cohort ctive surveillance,             | Restaurant Home Work Child Care School University / College Camp Doctor's office / Outpatient clinic Hospital In-patient Hospital Emergence Department | woods or wilderness Athletics Farm Pool or spa Pond, lake, river or other body of water Hotel / motel Social gathering, other than listed above Travel conveyance |
| TREATMENT  Did the patient receive an antibious this diarrheal illness?   | ed:  d/yyyy):  cen:  ID antibiotic for  \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | with isolation? Were written quaorders issued? If yes, where wa  Date quarantine Date quarantine Was the patient  | arantine  as the patient of the started?  e ended?  compliant   |  | ☐ Laboratory☐ Long-term care face /Rest Home☐ Military☐ Prison /Jail /Detent   | ☐ Community ☐ Other (specify)   |
| Specify name of second antibiotic   | c used:  | CLINICAL OU   | TCOMES  |  | OTHER EXPOSUR  | E INFORMATION   |
| Date second antibiotic began (mr<br>Number of days second antibiotic<br>Did the patient need kidney dialy<br>of this illness?   | taken:   | Discharge/Final Survived? Died? Died from this ill  | diagnosis:  |  | Does the patient know similar symptoms?  If yes, specify:  During the 31 days pripatient have contact  | ranyone else with<br>Y □ N □ U<br>or to onset of HUS did the  |
| HOSPITALIZATION INFORMA   | TION   | TRAVEL/IMMI   | IGRATION  |  | WATER EXPOSUR  | E   |
| Was patient hospitalized for this illness >24 hours?  |  | The patient is:  Resident of N Resident of a Foreign Visite Refugee Recent Immig Foreign Adop None of the a Did patient have List travel dates  Does patient knd symptom(s) who | or grant otee above e a travel hist o onset of HU and destination or had the same donated to contact information. | ory during the IS? Y N U ons se with similar ne or similar mation: | During the 14 days pr<br>patient have recreati<br>exposure to water, ir<br>household, commun<br>settings?  | ior to onset of HUS, did the<br>onal, occupational, or other<br>acluding aerosolized water in   |

|  |   | SSN   |
|--|---|---|
|  |   |   |
| FOOD RISK & EXPOSURE   |   |   |
| During the 31 days prior to onset of HUS, did  | Drink unpasteurized juices or ciders?. ☐ Y ☐ N ☐ U  | Eat raw salads or vegetables  |
| the patient eat any raw or undercooked meat  | Specify juices or ciders:   | other than sprouts?□Y□N□U   |
| or poultry? Y N U  | Apple   | Specify raw salad or vegetable:   |
| Specify meat/poultry:  | Orange  | ☐ Bagged salad greens without toppings,   |
| Specify place of exposure:   | ☐ Other, specify:   | type:<br>Salad with toppings, specify:  |
| During the 31 days prior to onset of HUS did the   | Eat other beef/beef products?   | Lettuce, type:  |
| patient eat any raw or undercooked seafood<br>or shellfish (i.e., raw oysters,                 | Roast   | Spinach   |
| sushi, etc.)?  | Steak   | Tomatoes, type:   |
| Specify type of seafood/shellfish  | Other, specify:   | ☐ Cucumbers ☐ Mushrooms, type:  |
| Specify place of exposure  | ☐ Other, specify:  Eat any poultry/poultry product?☐ Y ☐ N ☐ U  | Onions, type:   |
| Describe the source of drinking water used in  | Eat eggs or any dish having eggs as an ingredient? Y N U  | Potatoes, type:   |
| the patient's home (check all that apply):   | Taste/eat any uncooked batter (uncooked   | Other, specify:   |
| Bottled water supplied by a company  | cake/cookie batter, ice cream containing  | Eat sprouts?  |
| Bottled water purchased from a grocery store   | cookie dough) <b>containing eggs?</b> Y N U   | Specify type of sprouts: ☐ Alfalfa ☐ Clover ☐ Bean                                    |
| ☐ Municipal supply (city water) ☐ Well water   | Eat pork/pork products? Y N U   | Other, specify:   |
| Does the patient have a water softener or  | Specify type of pork/pork product: ☐ Sausage  | Linknown  |
| water filter installed inside the house to   | ☐ Smoked ☐ Unsmoked   | Eat fresh herbs? Y N U  |
| treat their water? Y N U   | Chops   | Specify: ☐ Basil ☐ Thyme  |
| During the 31 days prior to onset of HUS, did the patient drink any bottled water? ☐ Y ☐ N ☐ U | Roast   | ☐ Basil ☐ Thyme ☐ Cilantro  |
|  | Ham   | ☐ Oregano ☐ Rosemary  |
| Specify type/brand Where does the patient/patient's family                                     | ☐ Smoked ☐ Cured ☐ Canned   | ☐ Cumin   |
| typically buy groceries?   | Other, specify:   | Other, specify:   |
| Store name:  | ☐ Bacon<br>☐ BBQ  | Eat ready-to-eat dried, preserved, smoked, or   |
| Store city:  | Other, specify:   | traditionally prepared meat (i.e. summer sausage, salami, jerky)?                     |
| Shopping center name/address:  | Eat wild game meat  | Specify type of prepared meat:  |
| Shopping center hame/address.  | (deer, bear, wild boar)?  | Summer sausage, specify:  |
| During the 31 days prior to onset of HUS, did the  | Specify type of wild game meat:   | Salami  |
| patient:   | ☐ Deer/venison<br>☐ Bear  | ☐ Jerky ☐ Other, specify:   |
| Eat any food items that came from a produce stand,   | ☐ Wild boar/javelina/feral hog  | Eat deli-sliced (not pre-packaged)  |
| flea market, or farmer's market? Y N U   | Other, specify:   | meat?Y N U  |
| Specify source:  Eat any food items that came from a   | Eat other meat / meat products (i.e. ostrich,   | Specify type of meat:   |
| store or vendor where they do not typically shop   | emu, horse)?  | ☐ Bologna<br>☐ Turkey   |
| for groceries? Y N U   | Specify other meat/meat product:  | Ham   |
| Specify source(s):   | □ Emu   | Roast beef  |
|  | Horse   | Chicken   |
| Handle raw meat other than poultry? Y N U  | Under, specify:   | Other, specify  |
| Specify type of meat:  Beef (hamburger/steak, etc)   | Handle/eat finfish (i.e. Tuna, Mackerel, Skip Jack,<br>Amber Jack, Bonito, mahi-mahi / dorado, Blue fish, | Eat meat stews or meat pies?Y N U Specify:  |
| Pork (ham, bacon, pork chops, sausage, etc)  | Salmon, Puffer fish, Porcupine fish, Ocean sunfish,   | Eat gravy (i.e. beef, chicken, turkey)?. \( \text{Y} \) \( \text{N} \) \( \text{U} \) |
| ☐ Lamb/mutton  | sushi)? Y N Û U   | Specify:  |
| Wild game, specify:  | Specify type of finfish: ☐ Tuna ☐ Puffer fish   | Eat potentially hazardous foods (i.e. pastries,                                       |
| ☐ Other, specify:<br>☐ Unknown   | ☐ Tuna ☐ Puffer fish ☐ Parrot fish  | custards, salad dressings)?Y \( \square\) \( \square\) \( \square\)                   |
| Handle raw poultry? Y N U  | Skip Jack or Amberjack Porcupine fish   | Specify: ☐ Pastries   |
| Specify type of poultry:   | ☐ Bonito ☐ Ocean sunfish (Mola mola)  | ☐ Custards  |
| Chicken  | ☐ Mahi-mahi ☐ Bluefish  | Salad dressings   |
| ☐ Turkey ☐ Other, specify:   | (dorado/"blue dolphin") Salmon  | Other: specify  |
| Hinknown   | ☐ Sushi, unknown type of fish   | Eat at a group meal? Y N U Specify:   |
| Handle shell eggs? Y N U   | Other: specify Unknown  | Place of Worship  |
| Drink unpasteurized milk?□Y □N □U  | Eat raw fruit?  | School:   |
| Specify type of milk:  | Specify raw fruit:  | Social function   |
| ☐ Cow<br>☐ Goat  | Apples  | ☐ Other, Specify:   |
| Sheep  | Bananas   |   |
| Other, specify:  | ☐ Oranges<br>☐ Grapes, specify:   | Name:<br>Location:  |
| Unknown  | Pears   |   |
| Eat any other unpasteurized dairy products?  | Peaches   | Additional notes:   |
| Specify type of product:   | Berries, specify  |   |
| Queso fresco, Queso blanco or other  | ☐ Melon,specify<br>☐ Mangoes  |   |
| Mexican soft cheese  | Other, specify:   |   |
| Butter   |   |   |
| ☐ Cheese from raw milk,  |   |   |
| specify:<br>☐ Food made from raw dairy product,  |   |   |
|  |   |   |
| specify:  Other, specify:  |   |   |
|  |   |   |

Middle

First

Patient's Last Name

Suffix

Maiden/Other

Birthdate (mm/dd/yyyy)

Alias

|  |  | SSN  |
|--|--|--|
| ANIMAL EXPOSURE  | CASE INTERVIEWS/INVESTIGATIONS   | GEOGRAPHICAL SITE OF EXPOSURE  |
| uring the 31 days prior to onset of HUS did the patient:  wn, work at, or visit a pet store, animal shelter, and/or animal breeder/wholesaler/distributor? | Was the patient interviewed?□Y□N□U  Date of interview (mm/dd/yyyy): _/_/_  Were interviews conducted  with others?□Y□N□U  Who was interviewed? | In what geographic location was the patient MOST LIKELY exposed?  Specify location:  In NC  City |
| f yes, specify and give details:   | Were health care providers   | County   |
| ork with animal mportation?  | consulted? 🗆 Y 🗆 N 🗆 U   | ☐ Outside NC, but within US City   |
| yes, specify and give details:   | Medical records reviewed (including telephone review with provider/office staff)? ☐ Y ☐ N ☐ U Sources:   | StateCounty  |
| ork at or visit a slaughterhouse abattoir), meat-packing plant, poultry or wild game processing facility?  | ☐ Hospital ☐ Clinic/Health Care provider☐ Other☐ Please specify reason if medical records were not reviewed:                                   | ☐ Outside US City Country  |
|  | Notes on medical record verification:  | ☐ Unknown  |
|  |  | Is the patient part of an outbreak of this disease? Y  |
|  |  | Notes:   |
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Middle

First

Patient's Last Name

Suffix

Maiden/Other

Alias

Birthdate (mm/dd/yyyy)

# Hemolytic-Uremic Syndrome, post-diarrheal

#### 1996 CDC Case Definition

## **Clinical description**

Hemolytic-uremic syndrome (HUS) is characterized by the acute onset of microangiopathic hemolytic anemia, renal injury, and low platelet count. Thrombotic thrombocytopenic purpura (TTP) also is characterized by these features but can include central nervous system (CNS) involvement and fever and may have a more gradual onset. Most cases of HUS (but few cases of TTP) occur after an acute gastrointestinal illness (usually diarrheal).

# Laboratory criteria for diagnosis

The following are both present at some time during the illness:

- Anemia (acute onset) with microangiopathic changes (i.e., schistocytes, burr cells, or helmet cells) on peripheral blood smear and
- Renal injury (acute onset) evidenced by either hematuria, proteinuria, or elevated creatinine level (i.e., greater than or equal to 1.0 mg/dL in a child aged less than 13 years or greater than or equal to 1.5 mg/dL in a person aged greater than or equal to 13 years, or greater than or equal to 50% increase over baseline)

Note: A low platelet count can usually, but not always, be detected early in the illness, but it may then become normal or even high. If a platelet count obtained within 7 days after onset of the acute gastrointestinal illness is not less than 150,000/mm3, other diagnoses should be considered.

#### Case classification

#### Probable:

- An acute illness diagnosed as HUS or TTP that meets the laboratory criteria in a patient who
  does not have a clear history of acute or bloody diarrhea in preceding 3 weeks or
- An acute illness diagnosed as HUS or TTP, that a) has onset within 3 weeks after onset of an
  acute or bloody diarrhea and b) meets the laboratory criteria except that microangiopathic
  changes are not confirmed

Confirmed: an acute illness diagnosed as HUS or TTP that both meets the laboratory criteria and began within 3 weeks after onset of an episode of acute or bloody diarrhea

#### Comment

Some investigators consider HUS and TTP to be part of a continuum of disease. Therefore, criteria for diagnosing TTP on the basis of CNS involvement and fever are not provided because cases diagnosed clinically as postdiarrheal TTP also should meet the criteria for HUS. These cases are reported as postdiarrheal HUS.

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